

A comparative study: Analysis of financial performance of joint ventures in insurance sector

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Abstract

With the change in the business scenario, joint ventures in Insurance sector are playing an important role in uplifting the economy. With the help of this research paper, an attempt is made to understand the financial performance of life insurance companies, whose core business is banking and insurance is the diversified area for the companies entering into joint venture. For the insurance companies, the financial strength can be judged by the returns they are earning and the growth in the premium over the period of time. In this paper, a comprehensive study is done taking into account the returns on total assets (ROA) to analyze the financial strength of the life insurance companies. Two major life insurance companies of India are taken as sample, they are SBI Life Insurance & HDFC Standard Life Insurance. Various independent variables are identified and with the help of correlation analysis and multiple regression models, hypotheses are either accepted or rejected.

Keywords: joint ventures, financial performance, return on total assets, financial strength

Introduction

The joint venture is considered as a continuous process with demanding activity of organizing, guiding and developing better relationships. The joint venture is always an opportunity to learn and extend the knowledge in various perspective (Buchel, Prange, & Ruling, 1998) ^[1]. The most important factor considered in the formation of joint venture is the cost benefit analysis, which helps in deciding whether the agreeing parties will join hands together or not. The bargaining power of the parties will be affected by the benefits, cost, resources, alternatives available to partners, needs of the partners and barriers in joint venture agreement. On considering all these factors parties decide either to opt or not to opt the joint venture opportunity (Harrigan, 1986) ^[2].

This particular research paper will focus on the major joint ventures which took place in the insurance sector in India. Insurance sector is growing very fast in India. It is contributing major portion towards the Gross Domestic Product and also helping economy to grow. This study will take into account two major joint ventures in Indian Insurance Sector, i.e. SBI Life Insurance and HDFC Standard Life Insurance. SBI Life Insurance is in partnership with BNP Paribas Cardif since March 2011 and HDFC Standard Life Insurance is in partnership with Standard Life plc. Since April 2000. Both companies excelled in core business of banking.

An attempt is made to understand how these companies are performing in a diversified area of business. The most important aspect of any joint venture is the financial perspective. Over the period of time, the companies look forward to analyze the financial performance and growth of the company. As per the previous work done in the same area, the variable used to analyze the financial performance of the insurance sector is the Return on Total Assets (ROA). The performance of both companies will be studied individually as

well as comparatively taking into account Return on Total Assets (ROA).

Research Model & Hypotheses

Some researchers used total net profit to evaluate the financial performance (Akotey, Sackey, Amoah, & Manso, 2013) ^[3]. Some researchers used return on assets and return on equity as a key to evaluate financial performance (Mehari & Aemiro, 2013) ^[4], (Almajali, Alamro, & Al-Soub, 2012) ^[5], (Mwangi & Murigu, 2015) ^[6], (Dey, Adhikari and Bardhan 2015) ^[7], (Malik, 2011) ^[8]. These researches were conducted in different countries. These researches provided a base to propose model to study financial performance and growth aspect in India. The aforesaid research model has been adopted from previous studies working in the same area but in different countries. There are only few studies conducted in developing countries like India against a number of work done in developed countries. Hence, this study reviewed the concepts framed and studied abroad.

The approach to adopt multiple independent variables and its effect on the financial performance is an important contribution of the study. The research paper has the following main objectives:

- To examine the strength of relationship between firm specific characteristics and financial performance (Return on total assets).
- To study and examine the extent of relationship between ROA and firm specific characteristics.

The dependent and independent factor for the study includes the following:

- The dependent variable is the Return on total assets (ROA). It is an asset utilization ratio indicating how efficiently and effectively the firms are using its assets.

- The independent variables includes:
 - Size of the company (SZ): It is calculated as the natural log of the total assets.
 - Leverage ratio (LR): A total debt to total assets is the formula used. The variation in the leverage ratio helps in evaluating the company’s financial risk, whether it is improving or deteriorating.
 - Underwriting risk (UR): (Dey, Adhikari and Bardhan 2015) explained underwriting risk as “the firms has to increase the amount of risks assumed by writing life insurance with a potentially high exposure to loss, will need to maximize investment earnings, or alternatively introduce other risk management measures such as reinsurance. Mathematically it is shown as benefits paid to net premiums.
 - Tangibility of Assets (TA): Equation used is fixed assets to total assets. The companies prefer higher ratio.
 - Liquidity Ratio (LQ): liquidity ratio is calculated as current assets to current liabilities.
 - Premium Growth (PG): one of the ways to study the performance of insurance company is by the rate of growth in premium collected. It is calculated as the difference between the increases in premium over the preceding year divided by the premium of the current year.

To fulfill the above objectives two research techniques, i.e. Correlation analysis and regression analysis are used. The results are calculated using research tools MS office and SPSS statistical package.

Regression models and respective hypothesis

On the basis of previous researches, the following regression equations and respective hypotheses are framed for the study: Regression equations for various models:

[Model 1A]

$$ROA_{i,t} = \beta_0 + \beta_1SZ_{i,t} + \beta_2LR_{i,t} + \beta_3UR_{i,t} + \beta_4TA_{i,t} + \beta_5LQ_{i,t} + \beta_6PG_{i,t} + e_{i,t} \tag{1}$$

In accordance to this model, the respective null and alternate hypotheses are:

- H₀₁ = Firm specific characteristic (FSC) has no impact on ROA
- H₁ = FSC affects the ROA positively

[Model 1a]

$$ROA_{i,t} = \beta_0 + \beta_1SZ_{i,t} + e_{i,t} \tag{2}$$

In accordance to this model, the respective null and alternate hypotheses are:

- H₀₂ = Size of company (SZ) has no impact on ROA

H₂ = Size of company (SZ) positively affects the ROA

[Model 1b]

$$ROA_{i,t} = \beta_0 + \beta_1LR_{i,t} + e_{i,t} \tag{3}$$

In accordance to this model, the respective null and alternate hypotheses are:

- H₀₃ = Leverage ratio (LR) has no impact on ROA
- H₃ = Leverage ratio (LR) positively affects the ROA

[Model 1c]

$$ROA_{i,t} = \beta_0 + \beta_1UR_{i,t} + e_{i,t} \tag{4}$$

In accordance to this model, the respective null and alternate hypotheses are:

- H₀₄ = Underwriting risk (UR) has no impact on ROA
- H₄ = Underwriting risk (UR) negatively affects the ROA

[Model 1d]

$$ROA_{i,t} = \beta_0 + \beta_1TA_{i,t} + e_{i,t} \tag{5}$$

In accordance to this model, the respective null and alternate hypotheses are:

- H₀₅ = Tangibility of assets (TA) has no impact on ROA
- H₅ = Tangibility of assets (TA) positively affects the ROA

[Model 1e]

$$ROA_{i,t} = \beta_0 + \beta_1LQ_{i,t} + e_{i,t} \tag{6}$$

In accordance to this model, the respective null and alternate hypotheses are:

- H₀₆ = Liquidity ratio (LQ) has no impact on ROA
- H₆ = Liquidity ratio (LQ) positively affects the ROA

[Model 1f]

$$ROA_{i,t} = \beta_0 + \beta_1PG_{i,t} + e_{i,t} \tag{7}$$

In accordance to this model, the respective null and alternate hypotheses are:

- H₀₇ = Premium growth (PG) has no impact on ROA
- H₇ = Premium growth (PG) positively affects the ROA

Results & Implications

Correlation Analysis

To fulfill the goal of the study, it is important to study about the relationship between variables collectively, so as to better judge the effects of independent variables on the dependent variables on both the companies.

The results are extracted from the SPSS statistical tool, using an alpha value of 0.05.

Table 1: Combined Correlation Matrix (ROA)

	Return on total assets		Size of company		Leverage Ratio		Underwriting Risk		Tangibility of assets		Liquidity Ratio		Premium Growth	
	SBI Life	HDFC Life	SBI Life	HDFC Life	SBI Life	HDFC Life	SBI Life	HDFC Life	SBI Life	HDFC Life	SBI Life	HDFC Life	SBI Life	HDFC Life
Return on total assets	1	1												
Size of Company	0.914	0.836	1	1										
Leverage Ratio	0.343	0.580	0.430	0.871	1	1								
Underwriting Risk	-0.641	0.183	-0.763	0.063	-0.078	-0.356	1	1						
Tangibility of Assets	-0.687	-0.784	-0.843	-0.934	-0.312	-0.881	0.603	0.058	1	1				
Liquidity Ratio	0.625	-0.614	0.594	-0.719	0.293	-0.706	-0.095	0.227	-0.411	0.847	1.000	1.000		
Premium Growth	-0.290	-0.457	-0.450	-0.578	0.034	-0.439	0.495	0.098	0.143	0.544	-0.499	0.753	1.000	1.000

Correlation analysis is a method to check the multi-collinearity among the independent variables to develop the regression models. If the correlation coefficient shows a value more than 0.8, then there exists the collinearity between the variables (Anonymous) [9]. The degree of strength of relationship determines how the dependent variable is associated with independent variables and on basis of such relationship the regression equation model can be developed for other objective of the study. The degree of relationship between dependent and independent variables for two companies are different. In some

cases the independent variables are showing negative effect in case of SBI Life whereas same is showing positive effect in case of HDFC Life and vice-versa. There is a minute difference in the values of correlation coefficients for tangibility of asset and premium growth. In both companies these are negatively associated with ROA with a slight variation in values. The following table shows the summary for the degree of strength between dependent and independent variables for both companies.

Table 2: Summary of ROA Correlation Coefficients

ROA relationship with IVs	SBI Life Insurance	HDFC Life Insurance
Size Of Company	Highly Positive	Positive
Leverage Ratio	Positive	Positive
Underwriting Risk	Negative	Positive
Tangibility Of Assets	Negative	Moderate Negative
Liquidity Ratio	Positive	Negative
Premium Growth	Less Negative	Negative

Multiple Linear Regression Analysis

The regression model is used to test the hypothesis framed for the study. The hypotheses are tested with the help of the values computed from the regression model. The significance of the models is validated based on the information collected from output of the regression analysis. (Bhargava, 2015) [10]. The values used in testing the hypotheses are

- Un-standardized regression coefficients (B or slope) - This value is used to predict the dependent variables.
- Statistic t and Significance p - The t-statistics and corresponding 2-tailed p-value are used to test whether the independent variables is significantly different from zero,

using an alpha value of 0.05 (Choubey, 2013) [11].

- Co-efficient of Determination (R^2) – R^2 is used to find out the variation in dependent variable due to change in the independent variables. The value can range between 0 to 1.
- Adjusted R^2 – It answers a question “how the model is?”. The strength of the model is reflected through adjusted R^2 .
- Durbin-Watson statistics – It is used to check the independency of the observations. The value ranges between 0 to 4. To have a valid model, the value of such statistic should lie between 1.5 to 2.5 (Field, 2009) [12].

The result of the regression model is compiled from the part 3 of SPSS.

Regression values for Return on Total Assets

Table 3: Summary of regression values for Model 1A (ROA)

Dependent Variable →	Return on Total Assets					
	SBI Life			HDFC Life		
Independent Variable ↓	B	t-statistic	P-value	B	t-statistic	P-value
Size Of Company	.008	4.501	.011	.057	3.951	.017
Leverage Ratio	-.062	-2.429	.072	-1.267	-3.719	.020
Underwriting Risk	-.038	-.438	.684	-1.752	-2.618	.059
Tangibility Of Assets	1.288	4.288	.013	.137	.042	.968
Liquidity Ratio	.003	1.635	.177	-.031	-.858	.439
Premium Growth	.007	4.433	.011	.030	2.039	.111
R-square	.983			.940		
Adjusted R-square	.957			.849		
Durbin Watson	2.400			2.266		
ANOVA Significance	.002			.020		
Constant (β_0)	-.102			.143		

The ANOVA value indicates that the model is significant for both companies. From the above values it is said that the observations are un-correlated as the Durbin-Watson value lies between 1.5 to 2.5 for both companies. Overall, the model is fit up to 95.7% for SBI life and 84.9% for HDFC Life.

Hypotheses outcome for both companies: In case of SBI Life, the null hypothesis is rejected, as the relationship between independent factors and ROA is positively associated. Also in case of HDFC Life, the null hypothesis is rejected.

The Table 5 to Table 7 (in annexure) shows the values for the different models, on the basis of which the null hypotheses are either accepted or rejected. The acceptance of the null

hypotheses is shown in the following exhibit in a comprehensive way.

Table 4: Hypotheses Acceptance for Models

Models	Hypotheses	ROA	
		SBI Life	HDFC Life
Model 1	H01		
	H02		
	H03		
	H04		A
	H05	A	A
	H06		A
	H07	A	A

Table 5: Regression Value for Model 1a & 1b

Dependent Variable	Return on total assets											
	Model 1a						Model 1b					
	SBI Life			HDFC Life			SBI Life			HDFC Life		
Independent Variable	B	t-statistic	P-value	B	t-statistic	P-value	B	t-statistic	P-value	B	t-statistic	P-value
Size of Company	.005	6.778	.000	.017	4.579	.001	-	-	-	-	-	-
Leverage Ratio	-	-	-	-	-	-	.093	1.094	.302	.349	2.138	.061
Underwriting Risk	-	-	-	-	-	-	-	-	-	-	-	-
Tangibility of Assets	-	-	-	-	-	-	-	-	-	-	-	-
Liquidity Ratio	-	-	-	-	-	-	-	-	-	-	-	-
Premium Growth	-	-	-	-	-	-	-	-	-	-	-	-
R-square	.836			.700			.117			.337		
Adjusted R-square	.818			.666			.019			.263		
Durbin Watson	2.383			1.133			1.247			.694		
ANOVA Significance	.000			.001			.302			.061		

Table 6: Regression Values for Model 1c & 1d

Dependent Variable	Return on Total Assets											
	Model 1c						Model 1d					
	SBI Life			HDFC Life			SBI Life			HDFC Life		
Independent Variable	B	t-statistic	P-value	B	t-statistic	P-value	B	t-statistic	P-value	B	t-statistic	P-value
Size of Company	-	-	-	-	-	-	-	-	-	-	-	-
Leverage Ratio	-	-	-	-	-	-	-	-	-	-	-	-
Underwriting Risk	-2.242	-2.506	.034	.448	.557	.591	-	-	-	-	-	-
Tangibility of Assets	-	-	-	-	-	-	-1.365	-2.833	.020	-3.662	-3.786	.004
Liquidity Ratio	-	-	-	-	-	-	-	-	-	-	-	-
Premium Growth	-	-	-	-	-	-	-	-	-	-	-	-
R-square	.411			.033			.471			.614		
Adjusted R-square	.346			-.074			.413			.571		
Durbin Watson	1.103			.564			1.564			.809		
ANOVA Significance	.034			.591			.020			.004		

Table 7: Regression values for Model 1e & 1f

Dependent Variable	Return On Total Assets											
	Model 1e						Model 1f					
	SBI Life			HDFC Life			SBI Life			HDFC Life		
Independent Variable	B	t-statistic	P-value	B	t-statistic	P-value	B	t-statistic	P-value	B	t-statistic	P-value
Size of Company	-	-	-	-	-	-	-	-	-	-	-	-
Leverage Ratio	-	-	-	-	-	-	-	-	-	-	-	-
Underwriting Risk	-	-	-	-	-	-	-	-	-	-	-	-
Tangibility of Assets	-	-	-	-	-	-	-	-	-	-	-	-
Liquidity Ratio	.006	2.401	.040	-.049	-2.333	.045	-	-	-	-	-	-
Premium Growth	-	-	-	-	-	-	-.004	-.290	.387	-.024	-1.541	.158
R-square	.390			.377			.084			.209		
Adjusted R-square	.323			.308			-.018			.121		
Durbin Watson	1.043			.879			.873			.969		
ANOVA Significance	.040			.045			.387			.158		

Conclusion

Results of correlation analysis indicated an inverse for tangibility of assets and ROA for both companies where relationship is statistically significant (Malik, 2011) [8]. Assuming that these two companies representing the life insurance industry in India, the inverse relationship between ROA and tangibility of assets indicates that the return on total assets of the insurance industry as a whole in India is negatively affected by tangibility of assets. In order to increase ROA of Indian life insurance industry, the companies should try to reduce the value of tangibility of assets.

Results of correlation analysis suggest that there is an inverse relationship between ROA and premium growth for both companies where relationship is not statistically significant. The inverse relationship indicates that the increase in premium

growth of the insurance industry in India will decrease the ROA of Indian life Insurance industry as a whole (Mehari & Aemiro, 2013) [4]. The SBI life and HDFC life represents the Indian insurance industry and thus the life insurance sector are recommended to reduce the premium growth in order to enhance the ROA of insurance industry and vice versa.

From the regression model results, it is marked that both companies had positive relationship between size of company and ROA, tangibility of assets and ROA and premium growth and ROA, whereas an inverse relationship has been found between leverage ratio and ROA and underwriting risk and ROA. The relationship between liquidity ratio and ROA showed a conflicting result. In case of SBI life, the relationship is direct whereas in HDFC life the negative relationship exists. On the basis of this relationship, it can be assumed that in India

life insurance industry, different companies may experience different results for liquidity ratio.

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